

Claims

- 1 1. An electrophoretic display element comprising:
 - 2 at least one substrate and
 - 3 at least one cell, the cell defined by a cell wall and disposed on the substrate, wherein the
 - 4 cell has a width that is not greater than about three times a height of the cell wall.
- 1 2. The element of claim 1 wherein the cell has a width that is from about two to about
- 2 three times a height of the cell wall.
- 1 3. The element of claim 1 in which the cell wall is less than 10 micrometers wide.
- 1 4. The element of claim 1 wherein the substrate comprises a control grid electrode
- 2 structure.
- 1 5. The element of claim 4 wherein the cell comprises two laminated structures.
- 1 6. The element of claim 1 wherein the cell wall is formed at least in part with a
- 2 technique selected from the group consisting of photolithography, sandblasting, screenprinting,
- 3 embossing, laser etching and radiation curing.
- 1 7. The element of claim 1 wherein the substrate is permeable to a suspending fluid
- 2 and substantially impermeable to electrophoretic particles, such that the suspending fluid and the
- 3 particles fill a cavity defined by the cell walls.
- 1 8. The element of claim 1 wherein the substrate is coated with a polymer, the
- 2 polymer being insoluble in a suspending medium contained within a cavity defined by the cell
- 3 walls.
- 1 9. The element of claim 1 wherein a suspending fluid contained within a cavity
- 2 defined by the cell walls comprises a substantially clear liquid.
- 1 10. The element of claim 1 wherein the width is in the range of 5 to 200 micrometers.

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1 11. The element of claim 1 wherein the height is in the range of 10 to 100
2 micrometers.

1 12. An electrophoretic display element comprising at least one substrate and at least one
2 cell defined by a cell wall and disposed on the substrate, the cell containing a suspending
3 medium and a plurality of electrophoretic particles, wherein the cell has a shape that minimizes
4 hydrodynamic motion within the suspending medium.

1 13. The element of claim 12 wherein the hydrodynamic motion comprises a convective
2 current.

1 14. The element of claim 13 wherein the height is in the range of 10 to 100
2 micrometers.
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